(No Model.)

R. D. GREEN.

AUTOMATIC CAR COUPLING.

No. 588,420. Patented Aug. 17, 1897.

Fig. 1.

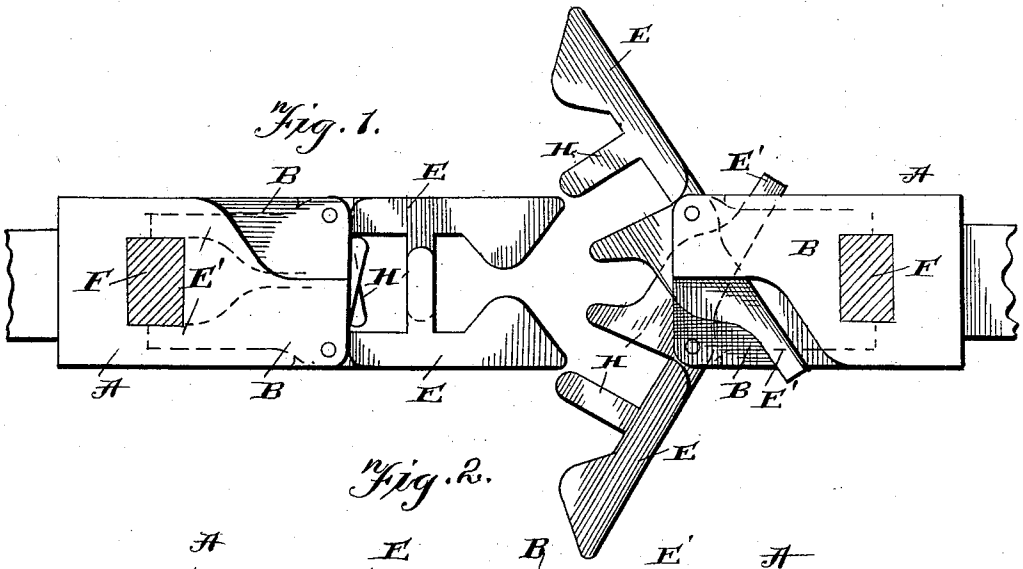


Fig. 2.

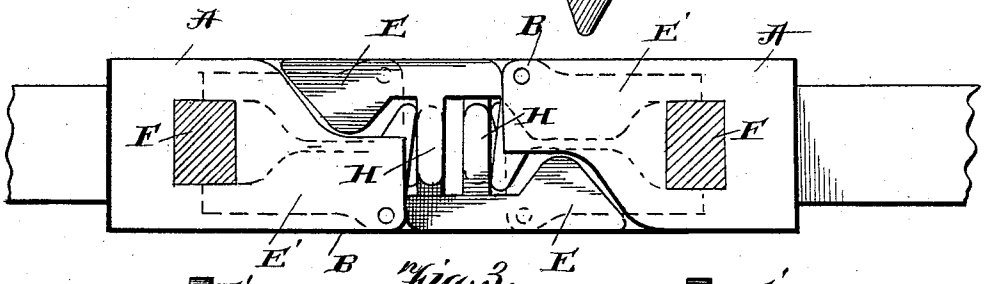


Fig. 3.

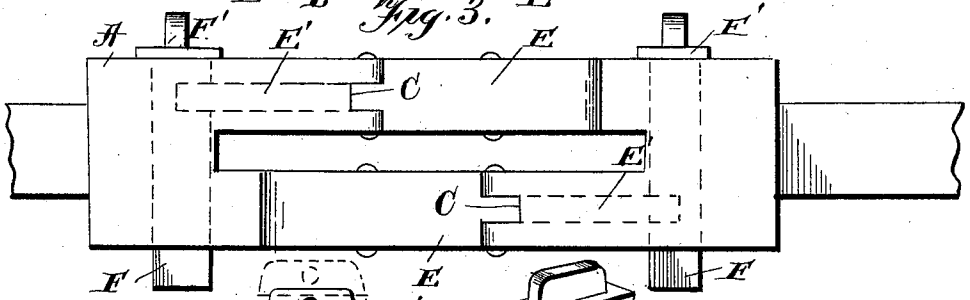


Fig. 4.

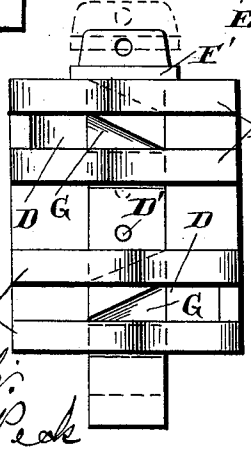
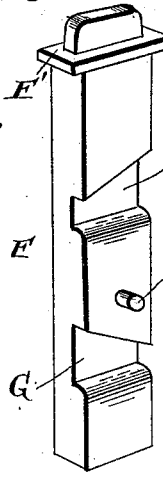


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT DOSON GREEN, OF SIMPSON, PENNSYLVANIA.

AUTOMATIC CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 588,420, dated August 17, 1897.

Application filed February 23, 1897. Serial No. 624,605. (No model.)

To all whom it may concern:

Be it known that I, ROBERT DOSON GREEN, of Simpson, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to automatic car-couplings; and the object thereof is to provide a perfectly safe, substantial, and positively-operating apparatus for connecting up cars without the necessity of the train-hands going therebetween during the coupling operation.

The invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter fully described and claimed, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan view of two couplers for adjacent cars, showing the position thereof just before uniting or interlocking. Fig. 2 is a similar view, the couplers being united. Fig. 3 is a side elevation of Fig. 2. Fig. 4 is an end elevation of one of the draw-heads, looking in the direction of the locking-pin, the latter being in its normal or lowered position in solid lines and shown raised as in the coupling operation in dotted lines. Fig. 5 is a detail view of the pin.

The couplers for the adjacent car ends being counterparts of each, with the single exception that they have opposite position, the following detailed description will be in the singular or will relate to one coupler only.

The draw-head consists of the rear block portion A and the two projecting portions B, the latter being arranged one above the other and extending horizontally forward on opposite sides of the transverse center of the draw-head. The forward ends of portions B are bifurcated at C, and from these bifurcations are recessed backward to portion A, as indicated at D.

Pivoted between their ends in bifurcations C and facing in opposite directions are jaws E, which swing horizontally, with their tail-pieces E′ moving in depressions D. A vertical opening or passage is formed in the center of the draw-head at the juncture of parts A and B, and working therein is pin F, formed on its front face, opposite depressions D, with transverse recesses G, and the tops of these recesses incline in opposite directions. With the pin in normal position these recesses are beneath the planes of depressions D, so that the rear ends of the latter are obstructed by the pin, and when the coupler is closed, as when united with the coupler of another car, tailpieces E′ are confined behind the pin, and jaws E are thus locked in their forwardly-extended closed position. The jaws are unlocked by simply raising the pin, so that recesses G aline with the tailpieces, when the jaws are free to swing laterally in opposite directions, as shown by one of the couplers in Fig. 1, when it is free from the other coupler.

The inner face of each jaw is formed with three projections or teeth H, adapted to interlock with the oppositely-positioned jaw of the adjacent coupler. The coupling operation is entirely automatic. In disconnecting the couplers pin F is raised by a crank-shaft or other suitable mechanism extending inward from the side of the car or downward from its top, (not shown,) when the jaws of the coupler thus operated upon are free to swing laterally, as above described, and the pin drops down with the upper inclined portions of recesses G in line with depressions D.

When coupling up two cars, the couplers remain as left by the uncoupling operation, the jaws of one being extended forward in locked position and the jaws of the other open. When coupling, the jaws remain in this position until the advance or forward ends of the locked jaws engage the inner edges of the inturned tailpieces E′ of the unlocked jaws of the other coupler, when the latter will straighten out in line with their draw-head, with the teeth of the jaws interlocking, as shown, tailpieces E′ during this operation turning laterally through inclined recesses G and automatically raising pin D until free therefrom, when the latter will drop in front of said tailpieces and lock the jaws, so that the couplers will be securely united. The upward movement of pin D is limited by projection D′ thereon extending between por-

tions B, while pin-head F′ rests on the draw-head top and properly limits the downward movement of the pin.

The forward end of each jaw is bisected horizontally and perforated vertically to accommodate the ordinary pin-and-link coupling.

The couplers may unite to form a close or loose coupling, according as teeth H are arranged on jaws E, as will be apparent. The coupling affords ample scope for variation in the height of cars and is particularly secure in rounding sharp curves and for leaning cars, owing to the fact that the complete device is formed substantially of a double coupling opening in opposite directions, so that any tendency to open, by strain or otherwise, one portion thereof will have the tendency to more securely unite the other portion.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An improved coupling, comprising a draw-head, two jaws pivoted in the draw-head to swing horizontally in opposite directions when opening and also when closing, and a vertically-movable locking-pin in the draw-head and arranged centrally between the jaws and to the rear of their pivotal points, the jaws engaging opposite sides of the pin when in locked position, substantially as shown and described.

2. An improved coupler consisting of a draw-head, two jaws pivoted between their ends therein and adapted to open by swinging horizontally in opposite directions, and a vertically-moving locking-pin formed with oppositely-inclined transverse recesses through which the rear ends of the jaws are adapted to pass in moving to a locked position, substantially as shown and described.

3. An improved coupler consisting of a draw-head recessed inward from opposite sides, one recess being above the other, oppositely-opening jaws pivoted between their ends in the recesses with their tailpieces working therein, and a locking device adapted to be operated by the jaws when closing or interlocking with an adjacent coupler, substantially as shown and described.

4. The combination of a draw-head consisting of the rear part A and recessed projecting parts B, the draw-head being formed with a vertical passage partly in portion A and partly in portions B, the oppositely-swinging jaws pivoted between their ends in the recesses of parts B with their tailpieces working across the line of the vertical passage, and the pin adjustable vertically in said passage and formed with oppositely-inclined passages on its front face in line with the recesses of parts B, whereby the pin is automatically operated by the tailpieces of the jaws, substantially as shown and described.

5. An improved coupling, comprising a draw-head, two jaws pivoted therein in different horizontal planes and adapted to swing horizontally in opposite directions when opening and also when closing, the pivotal points of the jaws being between their ends, and a vertically-movable locking device arranged centrally between the jaws and to the rear of the pivots thereof and adapted to be set by the movement of the rear ends of the jaws, either singly or in unison, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT DOSON GREEN.

Witnesses:

A. M. TRUESDALE,

V. S. TYLER.